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FULL LISTING OF THE CURRENT PENDING CLAIMS

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1.   (**Currently amended**) A method for identifying diet-regulated disease-associated polynucleotides comprising the steps of:

(i) selecting at least two different inbred <u>rodent</u> ~~known mammalian~~ genotypes (A and B) <u>all of the same generation and all either male or virgin female,</u> one of these genotypes (A) being susceptible to a disease, and the other genotype (B) not susceptible to the same disease;

(ii) dividing each genotype into two groups (A1 and A2 and B1 and B2);

(iii) for each genotype, each group is fed a different diet (A1 is fed diet No.1 and A2 is fed diet No.2, and similarly for B1 and B2);

(iv) measuring gene expression and comparing expression across the strains that differ in either genotype or in diet, but not in both;

(v) analyzing the expression data so as to identify diet-regulated disease-associated genes <u>in the disease susceptible strain wherein a gene that shows at least a two-fold increase or decrease in gene expression is considered to be a diet-regulated disease-associated gene.</u>

2.   (Original) The method of claim 1 further comprising comparing the diet-regulated disease-associated genes so identified with an independently-derived set of diet-regulated and/or disease associated QTLs.

3.   (**Currently amended**) The method of claim 1 wherein the disease is selected from the group consisting of diabetes, Alzheimer's disease, diabetes, cardiovascular disease, and cancer ~~a diet-associated disease~~.

4.   (Original) The method of claim 2 wherein gene expression is compared by comparing mRNA abundance.

5.   (Withdrawn) A method for determining the susceptibility of an individual to a disease, wherein said disease involves a diet-regulated disease-associated polynucleotide, the method comprising: screening an individual for the presence and/or expression of a plurality of

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polynucleotides identified by the method of claim 1, wherein the pattern of expression of said plurality of polynucleotides corresponds with the susceptibility of an individual to a certain disease.

6.   (Withdrawn) A method for monitoring the progression of a disease in a subject, the method comprising: at a first date, screening an individual for the presence and/or expression of a plurality of polynucleotides identified by the method of claim 1; at a second date re-screening the individual for the expression of the same plurality of polynucleotides, wherein a change in polynucleotide expression corresponds to the desirable or undesirable progression of a disease.

7.   (Withdrawn) A method for treating a subject so as to reduce the risk of the individual developing a diet-associated disease, the method comprising: screening an individual for the presence and/or expression of a plurality of polynucleotides identified by the method of claim 1, wherein the pattern of expression of said plurality of polynucleotides corresponds with the susceptibility of an individual to a certain disease; and altering the expression of one or more diet-regulated disease-associated polynucleotides to reduce the risk of the subject developing the disease.

8.   (Withdrawn) A method for treating a subject so as to reduce the risk of the individual developing a diet-associated disease, the method comprising: screening an individual for the presence and/or expression of a plurality of polynucleotides identified by the method of claim 1, wherein the pattern of expression of said plurality of polynucleotides corresponds with the susceptibility of an individual to a certain disease, and altering the diet of the individual so as to reduce the risk of the subject developing the disease.

9.   (Withdrawn) A method for treating a subject so as to ameliorate a diet-associated disease, the method comprising: screening an individual for the presence and/or expression of a plurality of polynucleotides identified by the method of claim 1, wherein the pattern of expression of said plurality of polynucleotides corresponds with the susceptibility of an

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individual to a certain disease; and altering the expression of one or more diet-regulated disease-associated polynucleotides so as to affect an improvement in the progression of the disease.

10.   (Withdrawn) A method for treating a subject so as to reduce the risk of the individual developing a diet-associated disease, the method comprising: screening an individual for the presence and/or expression of a plurality of polynucleotides identified by the method of claim 1, wherein the pattern of expression of said plurality of polynucleotides corresponds with the susceptibility of an individual to a certain disease, and altering the diet of the individual so as to affect an improvement in the progression of the disease.

11.   (Withdrawn) A method for classifying a subject diagnosed with a disease so as to select appropriate drug(s) or dietary treatment(s) for treating the disease, the method comprising: screening an individual for the presence polynucleotides identified by the method of claim 1, wherein the presence of various nucleotides corresponds to a particular classification.

12.   (Withdrawn) A method for formulating a food comprising: screening an in-bred population using the method of claim 1, determining the presence of one or more diet-regulated disease-associated genes in the population, determining which dietary elements are associated with altered activity of the genes, and formulating a food so as to appropriately alter the amount of the dietary elements in the food.

13 – 15. (CANCELLED)

16.   (Currently amended) A method for identifying ~~diet-regulated-disease-associated polynucleotides~~ genes that show at least a two-fold increase or decrease in expression in response to diet, the method comprising the following steps:
        (i) selecting at least two different inbred rodent genotypes (A and B) all of the same generation and all either male or virgin female, one of these genotypes (A) being susceptible to a disease, and the other genotype (B) not susceptible to the same disease;
        (ii) dividing each genotype into two groups (A1 and A2 and B1 and B2);

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     (iii) for each genotype, each group is fed a different diet (A1 is fed diet No.1 and A2 is fed diet No.2, and similarly for B1 and B2);

     (iv) measuring gene expression and comparing expression across the strains that differ in either genotype or in diet, but not in both;

     (v) identifying genes in the disease susceptible strain that show at least a two-fold increase or decrease in gene expression.

     ~~a) comparing gene expression between two inbred~~ rodent ~~strains in response to different diets, wherein one inbred strain is susceptible to a disease and the other inbred strain is not susceptible to the disease,~~

     ~~b) identifying those differentially-expressed polynucleotides that overlap with independently-derived diet-regulated QTLs, and~~